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AIR CORPS NEWS LETTER

9TH BOMBARDMENT GROUP

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX APRIL 1, 1937 NO. 7

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Information Division
Air Corps

April 1, 1937

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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INSTRUCTION IN COMMUNICATIONS AT AIR CORPS TECHNICAL SCHOOL

By Lieut. Forrest G. Allen, Air Corps

THE widespread realization that dependable radio communication is an essential adjunct to successful aerial operations has resulted in a very great demand for a large number of trained communications personnel. The course of instruction for aircraft radio operator-repairers conducted by the Department of Communications has been designed to furnish the service with trained men having reasonably high technical qualifications who, with little additional practical experience, will be prepared to perform any communications assignment.

The communications course for enlisted specialists is thirty-two weeks long, the first eight weeks of which are spent in the Department of Basic Instruction. Upon entering the Department of Communications, each student follows the prescribed schedule of instruction involving eight sub-courses, the facilities of which are briefly described below.

One of the first classes the embryo "communicator" attends is Typewriting. Typewriters having Western Union keyboards are used and the minimum requirement is twenty words per minute, using the touch system. Those students who are already proficient in the use of the typewriter when they enter school are excused from typing and attend the code classes instead.

After the student has qualified in typing, he attends code instruction twice daily for the duration of his course. The Code Room is equipped with automatic code machines of modern design, low and high frequency radio receivers, an Ediphone recorder for checking student transmitting ability, and an "ink recorder" for making permanent records on paper tape of each student's accuracy in forming code characters with the standard hand telegraph key and the Vibroplex semi-automatic key.

When the average student has obtained a code speed of approximately twelve words per minute, he is ready for the subcourse, called Applied Communications. This subject includes all phases of operating technique, aside from the actual use of radio equipment, which the aircraft radio operator must know. Each student is required to develop an operating knowledge of the Joint Army and Navy Radiotelegraph and Radiotelephone Procedure and the procedure in communicating with Department of Commerce radio facilities. After learning the principles of "message handling," the student applies them in practical exercises throughout the remainder of the course.

A brief but comprehensive course in electrical and radio fundamentals is given in the subcourse, entitled Principles of Radio Communication. While theoretical in nature, this subject has been made highly practical through the careful selection of demonstration and individual laboratory experiments. For example, students undergoing instruction on radio transmitters perform experiments which demonstrate the principles involved in the Command and Liaison Set transmitters. Particular attention is devoted to the proper tuning and adjustment of the circuits and correct interpretation of meter indications since experience has shown that these "theoretical" factors are of considerable importance in the practical use of the actual radio sets installed in aircraft. Cathode ray oscilloscopes are frequently used to make visible demonstrations of electric wave phenomena which formerly required the student to exercise considerable imagination. The equipment for individual laboratory experiments is permanently mounted on breadboards; with his experiment each student is given a supply of wires terminated in special quick-fastening connectors resembling glove snaps, so that the more complicated hook-ups may be accomplished within a few minutes. Specially prepared experimental data sheets are provided with each experiment so that students may quickly record laboratory data and have sufficient time to write out the answers to questions devised to aid them in drawing logical conclusions. From the foregoing description it will be readily appreciated that the Department of Communications has far better lecture room and laboratory facilities than most colleges and universities.

An understanding of the electrical and radio fundamentals provides the student with a proper foundation upon which to build his practical knowledge of standard Air Corps radio equipment; this special knowledge is acquired in the subcourse called Circuit Test and Repair of Radio Equipment. In this subject the student receives practical instruction on the operating adjustments, circuit

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testing and applied principles of modern service radio equipment. The Circuit Test and Repair laboratory contains over fifty specially designed, steel laboratory tables on which are mounted recent types of Command Sets, Liaison Sets, Radio Compasses, and Test Equipment; all power for the operation of aircraft radio equipment is obtained from a central power plant adjoining the laboratory room. Conspicuous by way of contrast is a row of ten aircraft radio transmitters, in vogue over ten years ago, which are employed in teaching the principles of transmitter trouble shooting. This is done by requiring the student to place designated troubles in the transmitters after which he records and analyzes the symptoms obtained. Although obsolete equipment is used in this phase of instruction, the principles involved are essentially the same as those embodied in modern equipment. Working with modern equipment, the student is required to develop an intimate practical knowledge of the numerous adjustments essential in its intelligent operation and maintenance. The general objective in this subcourse is to develop in the student the ability to read and understand the manufacturers' Handbooks of Instruction and Technical Orders pertaining to standard radio equipment, and intelligently to apply in practice the directions contained therein. It is doubtful if a more complete and well designed laboratory for this kind of important instruction could be found anywhere.

The ability to handle skillfully a soldering iron is as important to aircraft radio men as the ability to handle radio messages. In the subcourse entitled Shop Maintenance of Radio Equipment, students receive expert instruction in the care and use of soldering irons and the few hand tools associated with the radio repairman's work. Practical jobs assigned in this phase of instruction include radio cord and plug assembly, the formation of joints and splices; bus bar, cabled and flexible wiring; and several exercises designed to develop a small amount of skill in the above operations.

Field telephony and telegraphy are employed by the Air Corps to a limited extent, generally during maneuver pediods when working in cooperation with other arms. Consequently, the course in Wire Communication Equipment is a short one. During the time allotted, the student receives instruction in the installation, operation and field maintenance of field telephones, switchboards, and telegraph equipment, including the use of the latter in simplex and phantom circuits permitting the simultaneous transmission of telegraph and telephone messages over the same wires without mutual interference. Following instruction and practice in the installation of simple field wire systems, the student receives a small amount of training in field trouble shooting methods. The principles of wire telephony are also embodied in aircraft interphone equipment, a thorough knowledge of which is essential to aircraft radiomen.

The final phase of the course is devoted to thorough instruction, highly practical in nature, on the Inspection and Maintenance of Aircraft Radio Installations. Here the student is taught how to install and service aircraft antenna installations, how to "bench test" radio equipment prior to placing it into service on aircraft, how to perform the prescribed inspections of aircraft radio installations, and how to use a systematic method of locating troubles in the installation. Special lectures are given explaining the Air Corps Technical Order system, the Air Corps Circular system and the Signal Corps Supply Letter system; the student is required to look up references in these files throughout his work in this phase of instruction. The student is also taught how to read an airplane electrical wiring diagram, since some of the wires of the airplane communication system are included in the same conduits as other portions of the airplane electrical system. When aircraft are available, students are given actual operating practice in flight. In every respect, this subcourse is the most practical and most valuable in the entire communications course. It may be likened to the keystone of an arch, and being so it requires the firm foundation supplied by the various other courses which are prerequisite to it.

The course for Communication Officers is essentially the same as that given to enlisted specialists with the exception, however, that much greater emphasis is given to instruction in the electrical and radio fundamentals. In addition to the subjects already described, the officers are given instruction in the Duties of Communication Officers. This subcourse includes training in Signal Supply procedure, Message Centers and Military Cryptography, and Signal Orders. The Communication Officers' course is nine months long.

Following the trend of modern educational practices, the Department of Communications has adopted as standard for all examinations the so called "New Type" examination questions. Examinations of this type often include over a hundred questions, yet their design is such that they can be completed by the average student in from twenty-five to thirty minutes. The examinations may be graded in a few minutes through the use of specially designed answer keys, the use of which insures a standard basis for the grading of all examinations since there can be no doubt as to the "degree of correctness" of any questions; instructor opinion is thus eliminated in the grading of examinations

and the grade awarded a given paper will be the same regardless of who grades it. By making the examinations comprehensive in scope, each instructor can obtain a reasonably accurate measure of the knowledge possessed by his students, since errors due to chance selection of questions are virtually eliminated. When a sufficient number of students have taken each examination, the Training Literature Section conducts elaborate statistical investigations for the purpose of eliminating poorly designed questions and determining the degree of difficulty of the remaining questions. By this process, subsequent revisions of examinations are subject to continuous improvement as the amount of statistical data accumulates. In practice, the use of the "New Type" comprehensive examinations has met with universal favor by both instructors and students, since considerable time is saved by all concerned.

Many of the graduates of the communications course will report to their organizations to become aircraft radio operators aboard modern bombardment airplanes. Their responsibilities are akin to those of radio operators aboard seagoing vessels and they will become more so as military aviation develops and progresses. It does not require much imagination to conceive of situations where the radio operator will be directly responsible for the safety of the airplane in which he is flying and its crew. In such situations the level headed, resourceful operator of high technical qualifications will perform a service of much greater value than the cost of his training at the Air Corps Technical School.

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GENERAL PRATT DEPARTS FOR NEW STATION

Brigadier General Henry C. Pratt, U.S. Army, relinquished command of the Second Wing, GHQ Air Force to Colonel Henry B. Clagett on March 12th, and departed from Langley Field for his new command - the Air Corps Tactical School at Maxwell Field, Ala. The entire Base, which was formed in the vicinity of the main gate, felt very proud, indeed, to have had the pleasure of serving under their beloved commander.

Colonel Clagett will remain in command of the Second Wing until the arrival of the new Second Wing Commander, Brigadier General Gerald C. Brant.

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With the close of February, records show that the 4th Observation Squadron, Luke Field, T.H., completed the most extensive training program in many months. Squadron airplanes flew nearly 200 hours, and with several more months of this same type of training their War Department Training Directive should be completed on schedule.

G E A R B O X E S

By the Materiel Division Correspondent

From the days of the "Jenny" to our present line of airplanes, the mechanic, in so far as his work keeps the airplane on the ground, has more or less played the part of the forgotten man. It was hard to get performance and still keep maintenance in mind. On the other hand, if the man-hours spent in maintenance keep the high performance airplanes on the ground, then what good is performance?

In the hope that we can strike a happy medium, recent airplanes are coming in with remote-driven gearboxes. Substantially, this is no more or less than moving the rear of the engine back and driving the many gears from a single shaft from the engine proper. This gearbox has several drives to which may be attached vacuum pumps, generators, and other miscellaneous impedimenta necessary to keep our modern airplanes in the air.

To date, development of the gearbox is under way, and it appears to have several advantages, the first among them being the ease with which the engine may be changed by disconnecting the single driveshaft. Second, of course, is the added number of gadgets we may hook onto the drives of the gearbox. We all realize we had just about reached the limit of the accessories we could hang onto the engine proper. Third is the accessibility of these accessories. We hope it will no longer be necessary for the mechanic to hang by his heels, bend a couple of anti-brachiums around a generator, and with cold and numb fingers try to put that slippery nut and lock washer on that bolt that he can't see.

Gearboxes won't be perfect at first, but have patience and we will try to eliminate the "bugs."

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NAVIGATION TRAINING BY 88TH SQUADRON

The 88th Reconnaissance Squadron, Hamilton Field, Calif., is finishing a navigation school course which has been the center of attraction for the past four weeks. The course included about seventy-five hours of ground work, which has been completed, and about thirty hours of actual navigation training missions conducted by the school, which is about one-third completed. The successful completion of this course will qualify all present members of the 88th Reconnaissance Squadron as Dead Reckoning Navigators.

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During the past few weeks, the training activities of the 11th Bombardment Squadron, Hamilton Field, Calif., consisted of instrument flying, dead reckoning navigation and participation in 7th Bombardment Group Combat exercise on Feb. 27th.

DEDICATION OF NEW HANGARS AT LAWSON FIELD, GA.
By the News Letter Correspondent

SUNDAY afternoon, March 14, 1937, marked the completion of a new phase in the building and expansion program of Lawson Field, Fort Benning, Ga. Before a crowd of 3,000, which included the Atlanta Wing of the Junior Birdmen of America and hundreds of civilian visitors from Columbus, Ga., as well as Fort Benning personnel, the new hangars at the south end of Lawson Field were formally opened and dedicated by Colonel Bruce Magruder, Executive Officer of Fort Benning, Ga., who, by pressing a button, opened the 15-ton electrically operated hangar doors to the accompaniment of music by the 29th Infantry Band of Fort Benning.

Immediately following the opening of the doors, there was a demonstration of speed and maneuverability of light and medium tanks from the 66th and 67th Infantry, Fort Benning. Led by Captain Edwin J. Van Horne, 67th Infantry, six tanks came charging around the north, west and south sides of Lawson Field, with wide open throttle and machine guns firing blank ammunition. After the tanks were parked in a line just off the ramp in front of the new hangars, Capt. Van Horne explained to the crowd the type, weight, speed, armament, use and special features of each tank in a brief but comprehensive address over the mobile public address system, which was loaned to Lawson Field by the Academic Department of the Infantry School, Fort Benning.

Immediately following Captain Van Horne's address, Lieut. Thomas D. Ferguson, Air Corps, took off in an C-46A with Lieut. Thomas Lee Gates, Air Reserve, as observer, and flew a series of Observation Aviation missions, with Lt. Thomas M. Bartley, Jr., Air Reserve, furnishing explanatory remarks and announcements over the loud speaker. The missions flown included:

1. An exhibition of two-way communication between air and ground by means of panels, pyrotechnic signals and wing signals;
2. Drop-message and pick-up message demonstration;
3. A demonstration of communication between air and ground by means of two-way radio; and
4. Sensing of simulated artillery fire, with the use of puff targets.

Ground transmitter and receiver, furnished through the courtesy of the Tank School, Fort Benning, were connected with the loud speaker, in order that the crowd might hear the transmissions from ground to airplane and from airplane to ground.

Upon completion of these four types of Observation missions, Captain John W. Warren, Air Corps, took off in an O-25A, drop-tested a parachute, and towed a sleeve target across Lawson Field, releasing it in front of the hangars. Meanwhile, a demonstration of instrument flying under the hood was being given by Lieut. Gates in a BT-2B1, with Lieut. Ferguson as safety pilot. As a novelty feature for the entertainment of the crowd, this flight was controlled from the ground by radio, and Lieut. Gates executed climbing turns, steep banks, stalls and recoveries, etc., upon the request of Lieut. Bartley at the microphone, with the crowd hearing each request over the loud speaker.

On exhibition, but not taking part in the aerial demonstration, were an A-17, a B-10, and a P-12E from Maxwell Field, Ala., and an O-46A from Lawson Field. Thus, one airplane of each tactical type of the Air Corps was available for inspection by the crowd. Also on exhibition, inside the hangars, were exhibits by:

1. The Photo Section, Lawson Field, which included cameras, a camera gun, vertical and oblique photographs of Fort Benning and vicinity, and a mosaic map of the Fort Benning military reservation;
2. The Armament Section, Lawson Field, which included a Browning M-1, .30 caliber flexible gun mounted on gun trammel which was temporarily removed from the rear cockpit of an O-46A; pyrotechnic tools and M-9, M-10 and M-11 signal flares; one M-8 parachute flare; a belt of .30 caliber ammunition and loading device, and a tow target cable and release mechanism;
3. The Communications Section, Lawson Field, which included message bags, drop and pick-up message equipment, the latest type air-ground liaison radio equipment (SCR-185 set), a command set (SCR 183), and radio test equipment (I-65A);
4. The Parachute Section, Lawson Field, which included a parachute suspended from the ceiling of the hangar and strapped to a drop-test dummy dressed in winter flying clothing;
5. The First Battalion, 83rd Field Artillery, Fort Benning, which included a 75 mm. gun, model 1897, M-2; and
6. The Fourth Battalion, 29th Infantry, Fort Benning, which included a Browning .30 caliber ground machine gun, model 1917, and a Browning M-2, .50 caliber ground machine gun.

The success of this demonstration was due in a very large degree to the excellent cooperation received from all sources. It was most fitting that the exhibition should include, in addition to Air Corps equipment, that pertaining to other branches of the military establishment, since Lawson Field is not attached to, but rather a part of the Infantry School.

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Thanks are due to the Commandant of the Infantry School for his sponsorship of the entire program, also to the Tank School; the 66th and 67th Infantry; the 1st Battalion, 83rd Field Artillery; the 4th Battalion, 29th Infantry; the 29th Infantry Band and to the Academic Department of the Infantry School for their participation. Further, thanks are due to the Commanding Officer of Maxwell Field, Ala., as well as to Lieuts. Hale, Hughes and Ackerman, of Maxwell Field, who flew the B-10, the A-17 and the P-12, their cooperation enabling the exhibition to include one airplane of each tactical type of the Air Corps.

To the members of Flight B, 16th Observation Squadron, Lawson Field, the dedication of the new hangars was especially gratifying as a symbol of partial completion of needed improvements begun under the direction of the former commanding officer, Captain (now major) Lloyd Barnett, and carried on since his transfer to Nichols Field, P.I.

Further needed improvements listed for accomplishment in the near future are:

1. The leveling and grading of the south end of Lawson Field and construction of runways, through cooperation of the Quartermaster, Fort Benning, with W.P.A. labor, thus more than doubling the size of the landing area;
2. Completion of the night lighting system, which at present includes boundary lights, three banks of flood lights, and a rotating beacon, but lacks a sufficient number of obstruction lights;
3. Construction of an aerial gunnery range and a skeet range for required gunnery training; and
4. The acquisition by the Communications Section, Lawson Field, of a suitable ground set (SCR 188) to replace present obsolete and inadequate ground set (SCR 136). Each of the above projects having received tentative approval, their early accomplishment is anticipated.

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31ST SQUADRON GOES IN FOR NAVIGATION

In the 31st Bombardment Squadron these days, the motto and password is "Every Pilot a Navigator." For the last three months the officers and cadets of the Squadron have ground away at navigation problems by the dozen, listening to lectures on everything pertaining to Dead Reckoning Navigation, Maps, etc. "Even in our dreams," says the Hamilton Field Correspondent, "we see a 'Rhumb Line' 'Following the Pilot' over a 'mountain of Logarithms.' Lieut. 'Lonnie' Campbell, as instructor for Navigation in the 31st, has done a great job with his classes, and at last we have reached the point where we can see our motto 'Every Pilot a Navigator,' about to become a reality. A salute to 'Lonnie.'"

THE O-46 PLANE UNDER ICING CONDITIONS

A National Guard pilot reports an experience he encountered recently in connection with icing conditions while piloting an O-46A airplane.

He stated that under such conditions the wind shield becomes immediately opaque and non-transparent and that the ailerons become extremely sensitive, exerting undue pressure on the stick and resulting in very critical action and extreme lateral instability.

The pilot further goes on to state that upon landing at Trenton, N.J., with ice and while on the ground during further snowing conditions with temperature right at freezing, a combination of partial thawing of ice caused icycles to form on the leading edge of the ailerons and in the slot. With from one-eighth to one-quarter inch of ice on the top of the wing, take-off was attempted. Approximately 2,000 feet were necessary to get off the ground with 2,500 RPM and 34 inches of mercury in power. Immediately the left wing depressed in a rolling action around the longitudinal axis that was impossible to correct because of ineffectual aileron action and excessive stick pressure. The motor was immediately cut and sufficient field was left for a landing - the left wing low but not quite low enough to strike the ground. No damage resulted.

The pilot expressed the belief that the wing section itself is a design that becomes critical to icing conditions and therefore should be avoided; that he is positive that ice and snow on the ailerons, particularly the top side and in the slot ahead of the leading edge of the aileron, regardless of freedom of movement, precludes adequate lateral control, and therefore it seems imperative that pilots be advised that when such conditions of ice or snow are found on the airplane that the wing section, and particularly the entire aileron and its slot be thoroughly cleaned.

Regardless of the type of aircraft flown, icing conditions on the wings, even if present to a very limited extent, are very apt to affect the aerodynamic characteristics of same. The icing conditions described above are not peculiar to any one type of airplane.

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Two Air Corps officers who held temporary advanced rank were permanently promoted to such rank, as of March 31, 1937, viz: Colonel Alfred H. Hobley and Major Robert G. Breene.

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Captain John M. Weikert, Air Corps, is under orders to proceed to the U.S. Military Academy, West Point, N.Y., for duty, upon the completion of his present course of instruction at the C. & G.S. School.

NEW PHYSIOLOGICAL RESEARCH LABORATORY AT WRIGHT FIELD

By the Materiel Division Correspondent

ANNOUNCEMENT was recently made by Brigadier General A. W. Robins, Chief of the Materiel Division, Wright Field, Dayton, Ohio, that the Physiological Research Laboratory which for more than a year has been in the planning and construction stages at Wright Field, has been completed and equipped, and bears altogether the shipshape, antiseptic, and promising appearance of all medical laboratories devoted to scientific research. However, inasmuch as this particular laboratory is to deal with problems affecting the aviator in the various phases of flight, it is somewhat unique and, while a large amount of its medical equipment is standard, it also contains items found in few other laboratories in the world.

In the earliest days of flying such a laboratory was not necessary. Man flew neither sufficiently high, fast, nor far to take him beyond the elements of normal physical reactions. During the World War, however, the question of altitude flying became a vital consideration, and with the realization that very little was known about the artificial induction of oxygen into the human system, a medical research laboratory was established on Long Island which, although it aimed to go into all physical reactions resulting to aviators from flying, gave its attention principally to the study of oxygen problems.

In 1920, the work of the laboratory was discontinued, all activity being absorbed by the development needs of aircraft itself. By 1931, speeds, altitudes, and flying conditions had been stepped up to the extent where attention had to be turned once more to the aviator who in good weather and bad, in heat and in cold, in extremely high altitudes, spins, and at speeds beyond anything previously conceived by the mind of man, was to be responsible for this complicated equipment.

The present laboratory is the result of this need. Upon the joint decision of the Chief of the Air Corps and the Surgeon General, it was located at the Materiel Division in order that advantage might be taken of the expert judgment available in all aeronautical engineering lines, and of the well-equipped engineering shops, where special experimental equipment can be constructed. Situated in the main laboratory building on the ground floor - in order to provide a firm foundation for the massive high altitude chamber - the laboratory occupies a floor space 120 feet long by 30 feet wide. This space is partitioned off into office, physiological laboratory, biochemical laboratory, high altitude laboratory, operating room, balance room, and stock room. The whole laboratory is air-conditioned for the purpose of obtaining the uniform temperatures essential in certain analyses and for results with certain test instruments. The office scarcely requires comment, except that part of its equipment is a library of reference works on general and aviation medicine.

The physiological laboratory is equipped for research on human subjects and contains for the most part standard medical equipment, including metabolism apparatus, blood gas analyzers, which measure the amount of gases, such as oxygen, carbon dioxide, and in some instances carbon monoxide in the blood under varying conditions of altitude; an air analysis apparatus, which analyzes air in the lungs or in sealed compartments, taken during different conditions of flight; and a spirometer, a storage chamber for gas to be used in rebreather tests or for storing samples of exhaled or other air.

The biochemical laboratory - biochemical signifies chemistry of living organisms - contains a chemical table with acidproof top and a sink and drain board of chemical stoneware. The table is serviced with direct and alternating current power, compressed air, vacuum gas and water. There is also a fume hood, a water still centrifuge and refrigerator.

The balance room contains the analytical balances necessary to any chemical laboratory for weighing purposes. Plans are eventually to dust-proof this room.

The operating room also contains standare equipment. A kymograph is installed for the purpose of recording pulse waves, respiratory movements, etc.

The high altitude laboratory contains three pressure chambers, two small, having a capacity of 3 cubic feet, and a very large one. The latter has been recently completed and represents the results of several years of experience in the operation of the first pressure chamber, installed several years ago in the Equipment Laboratory of the Materiel Division.

The new chamber is a great cylindrical steel tube, 31 feet long and 8 feet inside diameter. The interior is divided into three sections, a central compartment 6 feet long, bisecting two identical end compartments, each 12 feet long. Entrance to the end compartments from the center is by two gastight heavy metal doors, equipped with ball bearing hinges, rubber gaskets, and catches, manually operable from within and without. The end compartments are in effect two separate pressure chambers in which separate tests may be performed simultaneously under the same or entirely different pressure conditions. Or if desired, the large doors into the center compartment may be left

open, the whole structure forming one 31-foot pressure chamber, which may be positively sealed for any desired temperature or pressure condition by a single entrance door, similar to those dividing the end compartments, leading from outside the pressure chamber into the center compartment.

The chief purpose of the central compartment, however, is to serve as a lock through which entrance can be made from the outside to the end sections during tests without disturbing the pressure conditions in them. The center compartment is entered and the outside door closed. Pressure and temperature conditions are then produced in the center chamber identical to those of the end chamber into which entrance is desired. When these results have been obtained the door into the end chamber may be opened easily and the two chambers in effect become one. Exit can be obtained by closing the door between the end and center compartments, bringing the center chamber back to normal pressure and opening the outer door. It is an interesting experience to see the actual fastness of a door held shut by normal air pressure against an evacuated pressure. Air evacuation to the equivalent of 80,000 feet above sea level and refrigeration to -65° F. can be accomplished in this pressure chamber.

In one of the end compartments at present is a smaller tubular chamber large enough for a man to crawl into, in which the conditions of the supercharged pressure cabin airplane will be simulated while the surrounding air of the compartment will be that encountered at high altitudes. In all such experimental work, flying personnel will willingly act as the human guinea pigs.

Six observation windows 28 inches in diameter, three for each end compartment, are constructed of safety glass one inch thick, and made fog or frost proof by using two thicknesses, with an air or vacuum space in between. Telephones installed in each compartment make it possible for persons sealed inside during tests to communicate with observers outside the pressure chamber.

The value of the research which may be accomplished with such equipment and competent personnel is almost inconceivable. Practically all the physical reactions of the aviator to altitude flying may be carefully studied while he remains safely on the ground. The effect of extreme cold upon efficiency; the effectiveness of present flying clothing against this cold, the testing of oxygen equipment, the physical and mental reaction of flyers to oxygen over varying periods of time, the effect of carbon monoxide at high altitudes and low temperatures, investigations of use of oxygen mixed with carbon dioxide at high altitudes, and supercharged cabins under high altitude flying conditions are a few of the many problems unsolved. The answer to such problems as these may also be the answer to certain unexplained crashes where pilot and equipment were apparently in first-class condition.

Although not located in the main laboratory building, a centrifugal force laboratory is used in connection with this work. This contains a large centrifuge by means of which it is possible to simulate the forces produced on the body by various aircraft maneuvers, particularly high speed turns, loops, and spins-such maneuvers, in fact, as have been associated with the "blacking out" experience described by various pilots, a condition recognized but never fully analyzed. With the centrifuge, centrifugal forces twenty times the normal acceleration of gravity can be produced. It is estimated that approximately eight times the pull of gravity is sufficient to cause the "blacking out" effect, or momentary unconsciousness. The structure is of duralumin tubing 20 feet long and is mounted to rotate about a horizontal axis. It is operated by an electric motor through a variable speed drive. One end is arranged to accommodate the subject, while the other contains a compartment for counterweights. A recording accelerometer indicates the amount of force produced, while a special instrument makes a graphic record of changes in blood pressure during rotation.

The future of aviation was never more promising. At our threshold higher speeds, longer ranges, greater mechanical efficiency, substratosphere air lanes are virtually ready for us. All these are not of the slightest value, however, unless man is ready to take advantage of them. It is only by scientific and detached study of the physiological and psychological reactions of aviators to the various modern flight conditions that safety can be obtained, even making allowances for a high degree of mechanical efficiency. History has sharpened the point that mechanical efficiency counts only insofar as mankind in applying human efficiency can adapt it to the routine uses of living.

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According to the Riverside, Calif., DAILY PRESS, the Board of Directors of the Riverside Chamber of Commerce has launched a campaign to enlarge March Field and purchase a gunnery range at Muroc Dry Lake. This action followed a report of the aviation committee which has been studying the needs of March Field. Results of the survey made by the committee showed that the Muroc gunnery range would be of benefit not only to aviation but other branches of the service as well. It would provide anti-aircraft and mobile units of the Coast Artillery with a practice ground.

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MIRROR PROVES HANDY ARTICLE IN EMERGENCY

A Navy Department press release tells of the ingenuity of a Marine Corps reserve sergeant from the Kansas City base which proved to be of the greatest assistance to one of Pensacola's flight instructors recently.

Captain Peters, U.S. Marine Corps Reserve, departed from Pensacola for Kansas City in an FF-2 plane with Sergeant Caldwell as passenger, Memphis being the first scheduled stop. Word was received at Pensacola that the plane had been forced down in a cotton field just north of Coffeyville, Ala., with a broken oil line, no other damage resulting. No oil lines to fit the description being available, a plane was dispatched to the scene to pick up the oil line and return same to the Pensacola Naval Air Station for repair. The pilot's description of the location of the grounded plane was definite within about a three mile limit. Upon arrival near the scene, the Pensacola pilot was unable to locate the other plane, as it was in a hilly, wooded country, abundant with pines and small clearings.

After several minutes search in a gradually increasing turning circle, the pilot suddenly noticed a bright flash of light which struck him in the eyes and continued to follow him. Immediately, he investigated the cause of the flashing light and discovered the other plane. A safe landing was made in the same clearing. The men on the ground had seen the circling plane and, being powerless to communicate with it, Sergeant Caldwell suddenly hit on the novel idea of a mirror to attract the pilot's attention. Accordingly, he drew one from his pocket and was successful in his first attempt to attract the pilot's attention. The Pensacola plane returned the oil line to Pensacola, where it was repaired, and the following morning it was returned to the grounded plane, thus enabling it to continue on its way to Kansas City.

Thus another use has been found for a mirror aside from its value as a toilet article.

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MORE NAVIGATORS FOR 2ND BOMB. GROUP

The Navigation Unit, Langley Field, Va., has just turned over four fully trained navigators to the 2nd Bombardment Group, GHQ Air Force, and started the instruction of four more officers in this subject. Those completing the class are 1st Lieuts. F.E. Glantzberg, W.H. Higgins, D.M. Kilpatrick and P.G. Miller. Those assigned to the new class are 1st Lieuts. R.E. Koon, W.A. Matheny, C.H. Rees and E.P. Mussett. When the 2nd Bombardment Group is completely equipped with the Y1B-17 planes, the navigators will undoubtedly obtain ample practice in navigation on long flights.

BIG BOMBER DELIVERED TO LANGLEY FIELD

The 2nd Bombardment Group, GHQ Air Force, Langley Field, Va., received on March 4th the first of the Y1B-17 airplanes delivered to a tactical unit. The officers and men of the Group were drawn up in parade formation to welcome the first "Flying Fortress."

With Major Barney M. Giles and Captain C.E. O'Connor at the controls, the huge plane flew by in review twice, and then glided in for a perfect landing on a snow-covered field. The size of the plane was not fully realized until it taxied to its position on the ramp, between a B-10B and a PB-2A. Major General Frank M. Andrews, Commanding General of the GHQ Air Force, and Brigadier General Henry C. Pratt, Commanding General of the 2nd Wing, GHQ Air Force, were both present to welcome Major Giles, the plane and crew to Langley Field.

On March 11th, Major C.V. Haynes delivered the second Y1B-17 to the 2nd Bombardment Group. The first one was assigned to the 96th Bombardment Squadron and the second one to the 49th Bombardment Squadron. At the time this was written, a crew from the 20th Bombardment Squadron was in readiness to depart for Seattle, Wash., to secure the third plane.

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SAFE LANDING SANS ONE LANDING GEAR

Luck and good piloting rode in the cockpit of one of the B-10B Bombers at Hamilton Field recently. Taking off for an Instrument Qualification Test, Lieut. Dale O. Smith, Air Corps, pilot, was notified by radio a short time later that one of his landing gears had fallen off. During the few moments after the warning was issued, the radio department had gotten in touch with the Commanding Officer, Colonel Davenport Johnson, who immediately rushed to the scene. By radio the Colonel and his aides issued instructions to the pilot and prepared to stand by for an emergency landing.

One of the wheels had stuck at about three quarters "wheels down" position, which tended to make the landing a dangerous one. After what seemed to be a century of waiting, the pilot started the plane on its downward path. Lower and lower it came until at the exact moment necessary for safety it hit. The wheel remained collapsed and the plane slid a few feet on its belly, slithering to a beautiful landing. Almost immediately the men were on the turf searching for fire.

The crew was composed Lieut. George F. Kinzie, co-pilot; Staff Sergeant R.F. Summers, Crew Chief, and Private Wiley C. Walters, Radio Operator.

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Items for the News Letter from March, Wheeler and Maxwell Fields are solicited.

V-7287, A.C.

YB-17 BOMBER LANDS AT BOLLING FIELD

SOARING majestically through the skies, the Army's new sovereign of the airways - the Boeing Bomber, YB-17 - circled Bolling Field on March 9th several times by way of heralding its arrival, and then came to a perfect landing on the new field to remain for a visit of inspection of four days.

A mutual tribute was paid in this landing. It was only fitting and proper that the Army's newest airplane creation should be the first to make an official landing on the new Bolling Field runways. This does not mean, however, that the new Bolling Field runways are in operation. While they are practically completed, there are no servicing or housing facilities for aircraft available. The old field will remain the official landing area until such time as funds are allotted by Congress for the necessary construction of technical buildings and they are completed. The Bomber's smooth landing proved, beyond the shadow of a doubt, that the new runways are perfectly equipped to accommodate any kind of aircraft.

Under the command of Lieut. Colonel Robert Olds, with Major Barney M. Giles as pilot, the "Big Ben of Bombers" was a most impressive spectacle in the air, with its powerful engines humming a tune of perfect rhythm. Once landed, it was taxied off the runway, properly secured and guarded by a quartet of sentries at all times.

Local newspapers featured the story of the plane's visit, and many hundreds of air minded citizens from Washington and vicinity came to view and pay tribute to its inspiring size, beauty and formidable fighting capabilities.

Several informal functions were held at the Officers' Club in honor of the visiting pilots, and the NCO Club held "Open House" for the picked enlisted men of Langley Field who comprised the crew.

On March 12th, at about 3:00 p.m., the great bomber again took to the air on its return trip to Langley Field, leaving Bolling Field personnel proud of both the visit and the unexpected "inauguration" of its new field.

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CAPITAL POLICE RECOVER STOLEN BALLOONS

Parking his automobile on a Washington street last week, Captain William H. Wenstrom, Signal Corps, Meteorological Officer of the 3rd Corps Area, stationed at Bolling Field, later returned to find that a box containing some four hundred balloons of the type used for weather observation had been stolenfrom his car.

By diligent effort on the part of the Washington police, the balloons were located in an abandoned stolen automobile.

AIRPLANES GAIN WEIGHT DURING FLIGHT
By the Hamilton Field Correspondent

The 9th Bombardment Squadron feels that they know the worst conditions for bombing, and as this Squadron completed bombing in accordance with TR 440-40 (Tentative) on February 20th and qualified only one bombardier, the following statement may have a concrete foundation. But first we would like to call to everyone's attention that these conditions are a bit "unusual" for this fair State of California.

We pride ourselves out here on knowing the place for each of nature's elements. This area being somewhat noted for the foggy conditions, we take these bad days in a willing, cheerful manner, but when Washington, Oregon and Northern California are in flames and a strong north wind is blowing, conditions may be said to be a little out of hand.

Knowing that it takes a little smoke or dust to bring on the gentle rains, we are naturally agreeable, but the feeling of rebellion was climaxed when slush floated around over the bombing targets in layers from the ground to eight thousand feet, and a pilot would land after a heart-breaking mission of two hours on instruments with his airplane weighing more than it did on the take-off. It may be advisable, if this sort of thing continues, that all airplanes in this area be equipped with flushing tanks for the purpose of bathing the various parts of our noble airplane.

It is also believed that if our opponents in any future engagements would add the essence of fir or the tang of mountain oak into their smoke screens, each and every combat man in this squadron would relaxwith the satisfied contentment of being at home again.

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5TH AIR BASE SQDN. A GROWING ORGANIZATION

Since the new allocation of 200 men to the 5th Air Base Squadron, Hamilton Field, Calif., business seems to have reached the peak. Paper is flying in all directions, and the Squadron as a whole have felt in many ways the need of a larger barrack and all accouterments. This squadron has received during the past week 114 recruits, bringing the Squadron count up to 434. Among these new men are to be found three sets of brothers, which seems to be a bit unusual to this correspondent, so we will delve into the facts of the case and add a few names to this bit of news. Privates Clyde F. and Elmer E. Hawes hail from Salem, Oregon. Privates John J. and Lyle B. Clemans are natives of Billings, Montana. Next in line are twins, i.e., Privates Milton D. and Milburn W. Raynor, of Dubois, Idaho. All of these men are recruits and they seem to enjoy the routine of Army life.

THE BOMBER B-THIRTEEN

(With apologies to that nonsensical old sea song, "A Capital Ship")

Oh, a capital ship for an aerial trip
  Was the bomber B-Thirteen.
No breeze that blew dismayed her crew
  Or troubled the captain's spleen.
So away she wheeled from the old home field
  On a mission far away;
And the home troops cheered as the old ship cleared
  At the speed of a one horse shay.

Chorus

Then blow, ye winds, heigh ho!
A-roving I will go!
I'll not be found on solid ground
So let the music play!
I'm off by the morning light!
And I won't be back till night!
I'm off for a trip in an aerial ship
A thousand miles away!

The gunner we had was apparently mad
  For the fare he fed his guns
Was a pound or three of T.N.T.
  Mixed up with a few stale buns.
His shots were as wild as a wayward child
  But his bullets roared afar;
They were every bit as likely to hit
  Their mark as the morning star.

Our bomber thought that the thing most sought
  Was a detonating blast;
And whether it blew in the ground or the blue,
  Was a question he never asked.
His bombs plunged down on a friendly town
  Or a hostile rampart grim;
And the havoc they wrought was often as naught
  To the hell that was raised with him.

Our radio op talked endless shop
  On the ground and in the air.
When the terminal fort sent a weather report
  He was always tuned elsewhere.
His voice was as raw as a black crow's caw
  When it caws at the rising moon,
And the usual tone of his microphone
  Was the ring of a small spitoon.

The old ship's prow was pointed now
  At the mountains dour and dree,
And the ridges rose beneath her nose
  Like the waves of a monstrous sea.
But one by one, in the dimming sun,
  They slowly dropped astern,
As the pilots twain with might and main
Spun wheel for a bank or a turn.

The captain sat on his folding hat
  And his pants of olive brown,
For he wanted to wear them both to the fair
  When the good ship got to town.
He was old and gray, and had got that way
  In his service through the years;
But his eyes were as true as the ocean's blue
  And he knew no silly fears.

As they droned along to the motor's song,
  The sky, that had been clear,
Was dimmed by the shrouds of drifting clouds,
  Which warned that a storm was near.
The dark clouds grew in the western blue
  To a wall that towered higher,
'Till the leaden pall of the thunder squall
  Was split by the lightning's fire.

The pilots heaved as the old ship weaved;
  They called on the interphone.
But the captain heard not a profane word
  And answer made he none.
The ship plunged down like a tumbling clown
  And up like a free balloon;
And the lightning flared till no one dared
  Look out in the leaden gloom.

They were flying blind in a bitter grind
  When the lashing hail began;
And it tore the wings into shreds and strings
  All along their straining span.
But a fierce upblast caught the ship at last
  And tossed her aloft bewhiles.
She was in a dive, but that great updrive,
  It carried her up for miles.

Up there in the rime was an Arctic clime,
  And the wings glazed over with ice;
And the motors true at last they knew
  The grip of a frigid vise.
They sputtered and died in that cloudland wide
  Where the lightning flashed between;
And the thunder rolled through the silence cold,
  And down went the B-Thirteen.

She dropped in a dive that none could survive
  And the pilots ordered all hands
To review their sins and jump for their skins
  Ere she crashed on those mountain strands.
The gunner fell like a devil towards hell
  As he hugged his beloved gun,
And the bomber followed in the path he hollowed,
  And the others, one by one.

Then last of all did the pilots fall,
  Well clear of the plunging craft;
And they thought, too late, of their traveling mate
  Of the captain, wedged back aft.
They watched the ship on its downward trip,
  And pulled on their parachute rings;
And the strong cloth spread over every head
  So they drifted on silken wings.

They watched the careen of the B-Thirteen,
  And they wept for the captain's fate.
For the clouds now broke like dissolving smoke,
  And the sun shone through in state.
The ridges rose beneath her nose
  Like the horns of an angry bull,
And with senses numb for the crash to come,
  They watched, and their hearts were full.

But wait! That plane was flying again
  And ahead of her, plain to see,
Was the welcome yield of a mountain field
  Where the forest used to be.
She turned from her glide to neither side
  As she settled smoothly to earth;
And she rolled to a stand on that level land
  As snug as a bug in a berth.

In that selfsame clearing the others were nearing
  The ground, when they gasped to hear
The captain roar from the after door
  Like a bull with a bee in his ear.
"You boobs," he yelled, "this crate has held
  Through worse storms, in her prime.
She flies as nice with wings of ice,
  As with fabric, any time."

V-7267, A.C.

At the old home fort an official report
Went forward to Washington;
And the medal looked well on the captain's lapel,
Where the President pinned it on.
And everyone said that a hero was made,
But the truth was otherwise --
In that stormy deep he had been sound asleep,
Not once had he opened his eyes!

- William H. Wenstrom.

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WELL KNOWN FLYER TAKES POSTMAN'S HOLIDAY

Second Lieut. Joseph C. Mackey, Air Reserve, acrobatic pilot and sky writer extraordinary, has recently completed a 14-day tour of active duty with the Air Corps Detachment at Port Columbus, Ohio.

In civilian life, Lieut. Mackey heads his own Flying Service at Findlay, Ohio, and holds an advertising contract with a prominent mid-west oil company. Thousands have acclaimed his prowess as a "stunter" during the past few years. At the Miami Air Races in 1936, he was awarded the Freddie Lund Trophy for acrobatic flying, after placing second in the International Air Show event at Paris, France, earlier in the year.

Lieut. Mackey reported that his fourteen days with the Military were well worth while. Particularly so were his flying hours in the new North American BT-9A's (not stunting).

"I value very highly the training I have received at Port Columbus, especially the instrument, radio beacon and tactical flying I had with the latest types of Army Air Corps equipment. With my own planes, practically all of my time is spent in keeping the up-side-down carburetors well lubricated and in checking the tensile strength of my safety belts," stated Lieut. Mackey upon his return to Inactive Duty status.

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COLORFUL CEREMONY FOR PRESENTATION OF TROPHIES

All squadrons of the Air Corps Advanced Flying School, Kelly Field, Texas, were on Saturday morning, March 13th, formed in a hollow square on the ramp in front of Post Operations. Colonel Arnold N. Krogstad, Commandant of the Advanced Flying School, presented four medals to 1st Lieut. Charles F. Densford, Air Corps, with the following remarks:

"Lieut. Densford, it gives me great pleasure to present to you, on behalf of the Michigan State Rifle Association, these four beautiful medals for proficiency in Pistol Competition. These medals are not only of intrinsic value, but indicate that you possess a skill in pistol shooting which represents years of effort on your part and reflects great credit on you, the U.S. Army, and the Air Corps, of which you are a representative."

These medals were won at the Michigan State Rifle Matches, held from July 4th to 12th, 1936, in matches as follows:

1st Prize for Rapid Fire with Pistol.
2nd Prize for Individual .38 Pistol Match.
3rd Prize for Individual .22 Caliber Pistol Match.
1st Prize for Individual Grand Aggregate Score with Pistol.

Colonel Krogstad then presented blue zipper type jackets, having on them a large yellow letter "K," standing for Kelly Field, to the members of the Post Football Team, with the following remarks:

"While we did not win any championship in football last fall, we did have a team representing Kelly Field. It isn't necessary to win a championship to have a successful season. The members of our team had the spirit to win and acquitted themselves in a worthy manner. They worked hard to give the rest of us enjoyment, and it is in recognition of this spirit of endeavor that we are presenting awards today."

The following men received jackets:

L.F. Anderson	V.L. Harrison	O. Howard
G.H. Geaslin	C.L. Sommers	S. DeFan
H.W. Beare	E.C. Lewis	P.E. Patton
L.F. Wallace	J.A. Sauer	C.K. Russell
R. Flagler	D.H. Smith	G. Collins

The News Letter Correspondent states that 1st Lieut. E.J. Timberlake, Jr., deserves a lot of credit for his work as coach of this team.

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DUTY ASSIGNMENTS OF ADVANCED FLYING SCHOOL STUDENT OFFICERS

The following-named Air Corps officers, now on duty as students at the Advanced Flying School, Kelly Field, Texas, and who are specializing in Observation Aviation, were, under Special Orders of the War Department recently issued, assigned to duty at the stations indicated upon the completion of their present course of instruction, viz:

Lieut. Colonel Laurence F. Stone and Lieut. Colonel Raymond E. O'Neill (Major) to March Field, Calif.

Major Walter J. Reed to Langley Field, Va.

Captain James F.J. Early to Langley Field, Va.

Captain Howard H. Couch to Mitchel Field, N.Y., for duty with 97th Observation Squadron.

Major George G. Lundberg (Captain) to Middletown Air Depot, Pa.

Captain John P. Kirkendall to the Hawaiian Department.

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STUDENTS ASSIGNED TO AIR CORPS TECHNICAL SCHOOL

First Lieut. Clayton E. Hughes has been assigned to duty as student in the Airplane Maintenance Engineering course at the Air Corps Technical School, reporting not later than August 15, 1937. First Lieut. George F. Hartman and 2nd Lieut. Charles B. Harvin are under orders to report to this school not later than September 19, 1937, for duty as students in the Communications course, while 1st Lieut. John C. Kilborn, of Randolph Field, is to report for duty as student in the Armament course.

The orders assigning 1st Lieut. John C. Horton, of Randolph Field, for duty as student in the Armament course at the Air Corps Technical School have been revoked.

V-7267, A.C.

Biographies

LIEUT. COLONEL HENRY J.F. MILLER

Lieut. Colonel Henry J.F. Miller, Air Corps, now on duty as Commanding Officer of Brooks Field, Texas, and the 12th Observation Group, was born in Salem County, N.J., September 10, 1890. He attended public schools in Philadelphia; was a student at Blair Academy, Blairtown, N.J., for one year; at the Preparatory Academy at Highland Falls, N.Y., for two years, and at the Kansas State Agricultural College, Manhattan, Kansas, for one year, when he was appointed a cadet at the United States Military Academy, West Point, N.Y.

Following his graduation from the Military Academy, June 12, 1915, Colonel Miller was commissioned a second lieutenand and assigned to the 11th Cavalry. He served with his regiment at Fort Oglethorpe, Ga., September 12, 1915, to March 12, 1916; with the Punitive Expedition into Mexico, March 18, 1916, to February 1, 1917; and at Camp Stewart, El Paso, Texas, February 5 to April 15,1917. From April 22 to July 1, 1917, he served with the 23rd Cavalry at Fort Oglethorpe, Ga.

Detailed to the Aviation Section, Signal Corps, he took flying training at the Signal Corps Aviation School at San Diego, Calif., in addition to serving as Assistant to the Engineer Officer of this School. From February 6 to April 1, 1918, he was on duty at Call Field, Wichita Falls, Texas, as Assistant to the Officer in Charge of Flying, following which he was transferred to Langley Field, Va., as Officer in Charge of Flying. In July, 1918, he assumed the additional duty of Engineer Officer of the School for Aerial Observers.

Assigned to the Handley-Page Training Depot No. 1 in October, 1918, he proceeded with this unit to England. He returned to Garden City, L.I., New York, on December 4, 1918, and was assigned to duty with the 1st Provisional Wing and as Commanding Officer of Roosevelt Field, L.I., New York. On February 3, 1919, he was detailed as Inspector of the 1st Provisional Wing. During the months of April and May, 1919, he was on duty with the Victory Loan Flying Circus, organized to stimulate the purchase of Government bonds. In October, 1919, he participated in the Transcontinental Reliability Test Flight. From March, 1919, to January, 1920, he was Officer in Charge of Flying at Hazelhurst and Mitchel Fields, N.Y., and from November, 1919, to January, 1920, he also commanded the 1st Aero Squadron.

From January 19 to February 26, 1920, Colonel Miller was on duty in the Information Section, Office of the Director of Air Service, and he then returned to Mitchel Field for duty as Commanding Officer of the 1st Provisional Observation Group. In June, 1920, he assumed command of the 5th Aero Squadron at Mitchel Field. From September to November, 1920, he performed additional duty as Acting Air Officer of the 2nd Corps Area. From December 1, 1920, to April 5, 1921, he was on duty as Post Adjutant and Commanding Officer of the Air Service Supply Detachment at Mitchel Field.

Transferred to Kelly Field, Texas, Colonel Miller commanded the 2nd Bombardment Group at that station from April 20 to May 16, 1921, when he was transferred with troops to Langley Field, Va., at which station he served as Assistant to G-3, 1st Provisional Air Brigade, to October, 1921. He then returned to Kelly Field and again took up the duties of Commanding Officer of the 2nd Bombardment Group. In March, 1922, he was assigned to station at Fort Knox, Ky., for duty as Assistant Adjutant, 5th Army Corps, and in charge of of Air Service personnel.

During July and August, 1923, Colonel Miller was on temporary duty at Wilbur Wright Field, Ohio, commanding a training camp for Reserve officers. He assumed command of Grissard Field, Cincinnati, Ohio, August 1, 1923, and until April 2, 1924, was on duty with the Organized Reserves of the 5th Corps Area and Executive Officer of the 417th Pursuit Squadron. From April, 1924, to March, 1926, he was on duty in the Office of the Chief of the Militia Bureau, Washington, D.C. His next station was Luke Field, T.H., where he served as Commanding Officer of the post and of the 5th Composite Group until August, 1926; as Executive Officer of the post and Group to December 4, 1926; as Commanding Officer of the 4th Observation Squadron, Wheeler Field, T.H., to January 11, 1927, and as Commanding Officer of the 18th Pursuit Group, Wheeler Field, T.H., to April 12, 1929.

Colonel Miller returned to Langley Field, Va., June 10, 1929, for duty with the 2nd Bombardment Group. In August of that year he took up his duties as student at the Air Corps Tactical School at that station. Upon his graduation from this School in June of the following year, he took a two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas. Assigned to station at Brooks Field, Texas, he served as Executive Officer of the post and the 12th Observation Group, and at various times temporarily commanded the post and the Group.

For about a year, Colonel Miller was on

duty as Air Officer of the 6th Corps Area. He returned to Brooks Field on October 16, 1935, since which time he has commanded the post and the 12th Observation Group.

Colonel Miller received his promotion to 1st Lieutenant, July 1, 1916; to Captain, July 25, 1917; to Major, March 17, 1925, and to Lieut. Colonel, November 1, 1936. He held the temporary rank of Major of Cavalry, August 8, 1918, to March 15, 1920; and that of Lieut. Colonel, June 18 to October 15, 1935; October 29, 1935, to November 1, 1936. He holds the flying ratings of Airplane Pilot and Airplane Observer, and is on the General Staff Corps eligible list.

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LIEUT. COLONEL HUBERT R. HARMON

Lieut. Colonel Hubert R. Harmon, Air Corps, now on duty as Commanding Officer of the 19th Bombardment Group, GHQ Air Force, March Field, Calif., was born at Chester, Pa., April 5, 1898. After attending the Polytechnic Preparatory School in Brooklyn, N.Y., for two years, he was appointed to the U.S. Military Academy, West Point, N.Y., from which he graduated June 12, 1915, whereupon he was commissioned a Second Lieutenant, Coast Artillery Corps. He served at Fort Monroe, Va., from September 12 to November 30, 1915; at Fort Andrews, Mass., to May 4, 1916; at Plattsburg, N.Y., as Adjutant of camp for Regular troops and Assistant Adjutant, Business Men's Training Camp, May 6 to October 8, 1916; and again at Fort Andrews, Mass., to November 24, 1916.

Attached to the Aviation Section, Signal Corps, he was a student at the Signal Corps Aviation School at San Diego, Calif., from December 8, 1916, to May 20, 1917. He was rated Junior Military Aviator to date from June 21, 1917.

Transferred to Fort Sam Houston, Texas, Colonel Harmon was recorder of the Aviation Examining Board at that post and Assistant Air Officer, Southern Department, to September 12, 1917. From September 13 to 26, 1917, he was stationed at Kelly Field, Texas, where he organized and served as Commandant of the Ground Officers' Training School. From September 26, 1917, to January 3, 1918, he was on duty as Department Aeronautical Officer, Southern Department, following which he was assigned as Engineer Officer of Kelly Field No. 2, San Antonio, Texas. On March 4, 1918, he was transferred to Taliaferro Field No. 2, Fort Worth, Texas, as Executive Officer.

From April 1 to September 3, 1918, Col. Harmon was Officer in Charge of Flying at Barron Field, Everman, Texas. He was then ordered to duty overseas and, following the completion of advanced training in Pursuit Aviation at the Third Aviation Instruction Center, Issoudun, France, he was, on January 5, 1919, assigned to duty as Chief of Staff to the Army Air Service Commander, 3rd Army, Coblenz, Germany, in which capacity he served until September 25, 1919. From September 26, 1919, to October 18, 1920, he was on duty as Aviation Officer, U.S. Liquidation Mission, Provisional District of Great Britain, London, England.

Returning to the United States, he was, on October 30, 1920, assigned to duty as Assistant Executive, Office of the Chief of Air Service, Washington, D.C., serving in that capacity until June 30, 1924. From October 28, 1921, he performed additional duty as Junior Aide at the White House, and as a member of various boards.

From July 1 to August 14, 1924, Col. Harmon was stationed at Bolling Field, D.C., following which he was transferred to McCook Field, Dayton, Ohio, for duty as student at the Air Service Engineering School. Upon his graduation, August 30, 1925, he returned to duty in the Office of the Chief of the Air Service, serving as Assistant Chief of the Information Division to March 10, 1926, and as Chief of that division until February 22, 1927. During his service in Washington, he also performed additional duty as White House Aide.

From March 5, 1927, to May 22, 1929, Colonel Harmon was on duty as Assistant Military Attache for Aviation at the American Embassy, London, England. He was then assigned to duty in the Department of Tactics, United States Military Academy, West Point, N.Y. In August, 1932, he was transferred to Maxwell Field, Ala., for duty as student at the Air Corps Tactical School. Following his graduation from this School in June, 1933, and from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1935, he was assigned to station at March Field, Riverside, Calif., where he was on duty as Executive and Operations Officer of the First Wing, GHQ Air Force, until August 17, 1936. He was then assigned to his present position as Commander of the 19th Bombardment Group.

Colonel Harmon was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, February 14, 1925; and to Lieut. Colonel, October 1, 1936. During the War he held the temporary rank of Major, and from August 13, 1935, to October 1, 1936, he held the temporary rank of Lieut. Colonel. He holds the flying ratings of Airplane Pilot and Airplane Observer, and is on the General Staff Corps eligible list.

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Under Special Orders of the War Department, recently issued, Colonel Albert L. Sneed, Air Corps, will proceed to Maxwell Field, Montgomery, Ala., for duty upon the completion of his tour of duty in the Philippines.

TRAINING QUESTIONNAIRE

THE Base Intelligence Officer, Selfridge Field, Mich., submitted copy of a "Training Questionnaire" covering a written examination recently conducted by each flight commander of the First Pursuit Group. He states that it is planned by the Group Commander to give similar examinations to all pilots semi-annually as a means of furthering the efficiency of individual pilots. The scope of this examination was, substantially, as follows. Some of the questions, being of a somewhat confidential nature, are here omitted.

1. The duties of S-1, S-3, S-4, and the Engineer Officer.
2. Show by diagram, with approximate distances specified, of normal flight formation and squadron normal formation.
3. Definition of Pursuit Aviation.
4. Procedure of Flights A and B in initial phase of squadron attack on 9 Bombardment planes formed in defensive formation.
5. Explanation of meaning of terms "Readiness," "Alert" and "Stations."
6. Significance of the signals Fishtail or Yaw; series of small dives or zooms; rock wings; leader dips wing to right when in an echelon of individual planes to the right; leader dips wing to the left.
7. Name two Class I and Class II supplies, and what are Class IV A and Class IV E supplies?
8. Procedure of pilot in event of forced landing across border.
9. How often do pilots take blind flying test.
10. What are qualifying scores in Pursuit Gunnery for Expert Aerial Gunner; 1st Class and 2nd Class Aerial Gunner?
11. With altitude of ceiling 2,000 feet and plane is just on top of the overcast at 6,000 feet, give procedure to bring it down through the overcast and land on a completely equipped airdrome.
12. Name two duties of the Squadron S-2.
13. As specified in TR 190-10, Conventional Signs, the basic symbol for a troop unit is [redacted]. How would you indicate that the unit is Air Corps - an Air Corps squadron - a Group - a Wing - an Antiaircraft Battalion?
15. In preparing for an inspection of airplanes preceding a review, what is the interval between airplanes and what may be the interval between flights and squadrons. Where is the parachute displayed on P-26 airplane. Where do the maintenance and combat crews take post?
16. What were some of the discrepancies noted in last 40-hour inspection of the airplane to which you are assigned as the combat crew?
17. Approximately how many hours before the next 20-hour check is to be made of the airplane to which you are assigned as the combat crew?
18. How much time was spent with maintenance crew during the last 40-hour inspection?
24. In a gas attack, why is it so important to have overhead cover of some kind?
25. Ammunition carried in P-26 airplane and how many quarts of oil in tank.
26. What altitude is used as a basis for aircraft reporting their altitude?
27. At what altitudes will aircraft fly on a true course from 0 degrees to 180 degrees, but not to include 180 degrees? From 180 degrees, but not to include 360 degrees?
28. Aircraft flying along and parallel to a designated civil airway shall fly where with respect to the "on course" signal?
29. Inbound planes shall fly where with respect to the radio ranges of a landing field?
30. Outbound planes shall fly where with respect to the radio ranges of a landing field?
31. At what altitude shall aircraft fly when crossing an airway and at what angle shall it be crossed?
32. What are the necessary radio contacts for approaching and departing from a landing field that has a control station?
33. What are the restrictions for approaching airports, with considerable traffic, without having radio (two way) in the ship?
34. May aircraft be flown below 2,000 feet in good weather for contact flying?
35. In flight, where could one find the frequency and call letter for any station on the airways?
36. Explain the difference between a hooded instrument flight and an intentional instrument flight and what are their restrictions.
37. After departure, how may a flight plan be changed with and without a radio in the airplane?
38. During a mass flight, how many airplanes should have their transmitters set on 3105 kilocycles?
39. What is the frequency for airplanes going on individual cross-country flights?
40. May intentional instrument flights be made along civil airways?
41. What are emergency altitudes, and by whom are they used?
42. What is the average maximum range of the SCR-183 radio transmitter?
43. Under what conditions are the following maneuvers permitted on a single-place Pursuit airplane - Inverted flight-normal spin - inverted spin.
44. What item of pilot's equipment must be carried during night flying in addition to the pilot's normal equipment?
45. What is the significance of the white traffic control light, A.C. type B-1A, to the pilot taxying on airdrome?

46. What is the minimum altitude at which military aircraft may fly over the White House in Washington?

47. You are 2nd Lt. A on a cross-country flight to Boston. Captain B, commanding the Air Corps Detachment, wants to take your airplane for a short local flight. What are your rights in the matter?

48. In applying for an extended cross-country flight, what two principles should guide the pilot in his choice of routes and airdromes for overnight steps?

49. What is the prescribed method to change from one source of fuel supply to another while in flight?

50. How can the proper setting of the fuel cock be determined?

51. What two precautions must be observed when using flaps for landing?

52. What precaution must be observed when retracting flaps immediately after take-off or when near stalling speeds?

53. What are the indications of ice formation in the carburetors?

54. Under what conditions is ice most likely to form in induction systems of engines?

55. What precaution should be taken to prevent ice formation in carburetors when flying under icing conditions?

56. What method may be used as a last resort to clear the ice from a carburetor?

57. What is the proper use of the throttle when starting an engine?

58. What is the proper method of using the mixture control to conserve fuel or to obtain maximum power at altitudes?

59. What may result from using an excessive amount of mixture control in the operation of air-cooled engines?

60. What five steps must be taken in stopping an aircraft engine?

61. What method should be used in stopping a fuel injector engine?

62. Why must the manifold pressure be reduced or the RPM decreased when checking magnetos?

63. What degree of accuracy can be expected with the type C5 (Kollsman Sensitive) altimeter?

64. How is pressure altitude obtained from a station altimeter?

65. What is pressure altitude variation?

66. What precautions must be taken when using below specification fuel, obtained for emergency use?

67. What action should be taken at earliest opportunity after use of lower than Air Corps Specification fuel?

68. What conditions of oil temperature and pressure must be obtained before full throttle operation?

69. What are the minimum altitude and maximum airspeed at which it is considered safe to release the M8 parachute flare?

70. What is the approximate area effectively lighted by an M8 flare when released between 1,000 and 3,000 feet?

ELIGIBLES FOR W.O. APPOINTMENT

The Adjutant General's Office, War Department, published a pamphlet showing, as of March 1, 1937, the names of noncommissioned officers who recently passed the examination for appointment as Warrant Officer of the Army, these names being placed on the eligible list in order of length of service in the Army, from which vacancies in the grade will be filled.

Of the 740 names of noncommissioned officers on the eligible list, 114 are members of the Army Air Corps - slightly over 15 percent of the total number of eligibles. Since the publication of this eligible list, a total of 67 noncommissioned officers received appointment to the grade of Warrant Officer, including six from the Army Air Corps. Consequently, the noncommissioned officer who was No. 68 on the list is now No. 1 thereon.

The first Air Corps noncommissioned officer now on the eligible list is Master Sergeant Charles Budoff, who was originally No. 77 and who is now No. 10.

The Air Corps noncommissioned officers on this list, together with their position thereon, appear below, as follows:

No.	Name
77	Master Sgt. Charles Budoff
85	Master Sgt. Charles Maylon
102	Master Sgt. Nico G. Loupos
108	Technical Sgt. Richard Rogers
141	Technical Sgt. Ruben St. John
146	Technical Sgt. Edcil C. Maxwell
169	Master Sgt. Harvey H. Hewitt
182	Master Sgt. Charles C. Leiby
188	Master Sgt. Murton K. Morrill
190	Technical Sgt. William J. Riley
198	Master Sgt. Gervais J. Garner
205	Master Sgt. Harry Wilson
213	Master Sgt. Walter Johannsen
217	Master Sgt. James D. Mehegan
219	Staff Sgt. Jacob S. Brown
223	Master Sgt. Carlton P. Smith
235	Master Sgt. Thomas J. Kelly
239	Master Sgt. Clarence Haymes
247	Staff Sgt. Anthony Groves
260	Master Sgt. William H. Folz
271	Master Sgt. Stewart C. Smink
276	Technical Sgt. Lonnie M. Johnson
282	Master Sgt. Robert B. Travis
284	Master Sgt. Chester F. Colby
285	Master Sgt. Floyd B. Haney
286	Master Sgt. Olin Brown
293	Technical Sgt. Clyde W. Doyell
302	Master Sgt. David T. Murphy
316	Master Sgt. John W. Frazer
319	Staff Sgt. Paul D. Bennett
342	Master Sgt. Alvan Killgore
343	Staff Sgt. Chauncey L. Anderson
357	Master Sgt. Joe M. Cates
358	Master Sgt. Samuel J. Davis
359	Technical Sgt. William V. Apple
361	Master Sgt. Arvin E. Milfer
363	Technical Sgt. Wallace H. Williams
366	Technical Sgt. Thomas L. Willison
369	Master Sgt. Bernard Wallace

No.	Name	
370	Technical Sgt.	Russell C. Peckham
371	Master Sgt.	Boyd D. Ertwine
375	First Sergeant	Steve Stanowich
382	Technical Sgt.	John B. Von Euw
386	Staff Sergeant	Emmett A. Mobley
404	Master Sgt.	Ronald M. Short
413	Staff Sergeant	Fred C. Brockhausen
425	Staff Sergeant	John H. MacKenzie
431	Staff Sergeant	William P. McQuillan
432	First Sergeant	Robert Miller
433	Staff Sergeant	Lemuel T. Payne
438	Staff Sergeant	Floy L. Ashley
440	First Sergeant	William L. Jones
444	Staff Sergeant	David L. Fredenburg
457	First Sergeant	C. M. Guttenberger
460	Sergeant	Chas. C. Cunningham
461	Technical Sgt.	Virgil Moore
462	Staff Sergeant	Albert G. Gerlach
469	Staff Sergeant	Oliver E. King
475	Sergeant	Nelson E. Morgan
476	Technical Sgt.	Artie L. Revert
481	Technical Sgt.	Albert E. Freathy
491	Staff Sergeant	Albert C. Bergis
493	Technical Sgt.	Earl B. Redifer
494	Master Sgt.	Julius A. Kolb
495	Master Sgt.	Raymond A. Stockwell
496	Master Sgt.	Albert V. Kanig
506	Staff Sergeant	Henry W. Spiller
508	Staff Sergeant	Harry A. Tunks
511	Technical Sgt.	William E. Pope
523	Staff Sergeant	Charles S. Segelbaum
525	Staff Sergeant	Leslie K. Kingsley
533	Staff Sergeant	Harry J. Pitre
535	Staff Sergeant	Joseph Montgomery
537	Technical Sgt.	Hugh J. Marth
539	Staff Sergeant	George R. Boston
540	Staff Sergeant	Sidney M. Rahn
543	Technical Sgt.	Paul Grossman
545	Technical Sgt.	William D. Croy
546	Staff Sergeant	Clyde C. Liming
555	Technical Sgt.	Henry H. Gray
556	Technical Sgt.	Leo I. Herman
559	Staff Sergeant	Manuel J. Novak
564	1st Sergeant	Leo W. Axford
572	Staff Sergeant	Raymond M. Bishop
573	Staff Sergeant	Joseph B. Greswick
589	Staff Sergeant	Almon S. Farrar
593	Staff Sergeant	George H. Goodrich
596	Technical Sgt.	Frank J. Siebenaler
600	Staff Sergeant	Maurice M. Beach
601	Staff Sergeant	Geyser W. Pulliam
609	First Sergeant	Richard W. Hahn
614	Corporal	Rudolph Lesnick
619	Technical Sgt.	Albert G. Hewitt
620	Staff Sergeant	Joseph Ducheane
626	Staff Sergeant	Ralph Colby
628	Staff Sergeant	Benjamin Harrison
635	Technical Sgt.	Joseph R. Grey
652	Staff Sergeant	Leonard Gilsen
662	Staff Sergeant	Samson Smith
665	Staff Sergeant	Robert M. Proudfoot
667	Technical Sgt.	Theodore C. Totman
678	Staff Sergeant	Thomas E. Arnold
681	Staff Sergeant	Francis Ledoux
688	Staff Sergeant	Milton H. Hawkins
691	Staff Sergeant	Frank Bobulski
717	Staff Sergeant	Edgar K. Hillman
721	Staff Sergeant	Arthur Hanson
740	Staff Sergeant	James C.Richardson

AERIAL GUNNERY DOESN'T WORRY FISHERMEN

Gunnery over the ocean! Blue and white waves breaking over the shoals and rocks of a rugged coast - and overhead a plane with a sleeve target drones by while another plane overtakes it from the rear. For an instant the peace and prosaic quietude is shattered by the cold chattering of a machine gun. But the fishermen in their tiny boats along the shore pay little heed - for 'tis an every day occurrence for them. They did take notice at first, and the boats would "up-anchor" and scamper away; but as the planes continued to fly back and forth between two fixed points, the planes became a part of the expected order of things.

In the 31st Bombardment Squadron, Hamilton Field, Calif., "Safety and Caution" have ever been the watchwords. One of the first rules observed is never to go to sea without having each member of the crew wearing a life-vest under his parachute and a pneumatic life raft in the belly of the ship. A second rule is to always shoot out to sea, and with a constant watch for boats in the direction of fire. A third rule that the Squadron observes is that cross-under courses be made only with the plane in level flight and not in a banking turn. It has been found that even the best pilots sometimes gain and lose altitude in banks. An unconscious gain in altitude while crossing under the steel tow line is apparently unhealthy - hence the rule for the fixed angle intersection of courses.

In an effort to maintain the GHQ Training Schedule with the three airplanes available to this Squadron, the engineering section has kept these ships in commission for flying every day. This has meant hard and efficient work. Inspections have been "pulled" after dark and repairs made late in the night in order that when eight o'clock the following morning rolls around the ships would be ready to take to the air.

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SHIFTS IN AIR DEPOT COMMANDERS

Colonel Lawrence S. Churchill (Lieut. Col.), Air Corps, commending the Middletown Air Depot, Middletown, Pa., is under orders to proceed to Langley Field, Va., for duty. Colonel Jacob W.S. Wuest, who has been in command of the Rockwell Air Depot, Coronado, Calif., is under orders to proceed to Middletown, Pa., to assume command of the Air Depot. Lieut. Colonel Harold A. Strauss, who for a number of years has been Chief of the Procurement Section of the Air Corps Materiel Division, Wright Field, Dayton, Ohio, succeeds Colonel Wuest as Commanding Officer of the Rockwell Air Depot. These changes go into effect this summer.

THE SOLDIER IN THE ARMY

COLONEL Henry B. Clagett, Air Corps, Commanding Officer of Selfridge Field, Mt. Clemens, Mich., recently addressed about 150 recruits of less than one year's service who had gathered in the Post Theatre. He dwelt on the various phases of the life of a soldier, starting from the entrance into the service, the period of transition between that of a civilian and a soldier in which the former becomes acclimated to the life of a soldier, the advantages of the Army to the individual, the education he can receive which will benefit him in his career as a soldier or as a civilian after his enlistment has expired, the advantages the Army offers as a career, the necessity of discipline, and the services they render to their country, to their family, and to themselves.

Colonel Clagett emphasized the elaborate school system of Selfridge Field, whereby the young soldier could elect to pursue a definite training. There are many vocations offered in the school system of Selfridge Field, none of which are different than those pursued in civil life. Should the soldier pursue any one of these courses in a conscientious and thorough manner, he would be qualified, upon the expiration of his term of enlistment, to step out into civil life with a journeyman rating in such vocation and take his place amongst the best mechanics of his kind.

Emphasizing the military training given to the soldier, Colonel Clagett stressed the point where a man schooled in the art of discipline and soldierly attributes was assured of becoming a success in the Army or in civil life.

Having learned the principles of discipline, the soldier, upon expiration of his term of enlistment, can step out into civil life and take his place in society as a trustworthy and honest citizen.

Colonel Clagett also emphasized the necessity of the soldier's conduct, particularly when in the presence of civilians and away from the military reservation, so that nothing but the finest credit could be reflected upon the service.

His address was most interesting, as evinced by the attention and enthusiasm given to him by his audience.

Colonel Clagett is a soldier of over 36 years' service, and his remarks were based upon these years of experience. He has always evinced a great deal of interest in the welfare of the soldiers of his command, and particularly looked out for the welfare of the young soldier or recruit. He has made himself available to these young soldiers for advice or any instructions that they might seek, and has instilled into his officers and older soldiers this same spirit of friendliness towards the young man just entering on a military career.

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VISIT TO SELFRIDGE FIELD BY HIGH SCHOOL AVIATION CLUB.

Mr. Paul B. Hartman of the Department of Industrial Arts of the Devilbiss High School, Toledo, Ohio, received a letter from Army Air Corps officials at Selfridge Field, Mt. Clemens, Mich., stating that they would be very happy to have the students of that school as their guests on an inspection tour of the Air Base. Accordingly, the Aviation Club of the Devilbiss High School announced plans for a pilgrimage to Selfridge Field on March 30th.

It was arranged for pilots of the Regular Army Air Corps units to act as guides for members of the club during their tour through various machine shops, maintenance, repair and assembly hangars, and while inspecting and observing the actual training of the fighting airplanes and their crews of the famous First Pursuit Group.

The units at Selfridge Field have probably more historical interest for the visitor than any other such group in the country. All the squadrons at Selfridge participated in battles of the World War in France. Almost every famous American "Ace" served as a member of this Group in the World War days, among them being Captain Eddie Rickenbacker; Major Raoul Lufbery; Frank Luke, the "Balloon Buster;" Reed Landis, son of the well known Judge Kenesaw Mountain Landis; Wilbur White; Major Frank O'D. Hunter, and many others.

Famous mementos of the World War days are still exhibited and highly prized by the present personnel of the First Pursuit Group.

Selfridge Field is also the scene of the Army's famous annual Mitchel Trophy Race, which is open only to pilots of the First Pursuit Group and which has attained great fame not only as the oldest established air race in the world but also as the safest, since even though these races are flown with military fighting aircraft not a single participant has ever been injured since this contest for the John L. Mitchell Trophy was inaugurated in 1922.

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Colonel Arthur G. Fisher, until recently Commandant of the Air Corps Tactical School, Maxwell Field, Ala., assumed command of Scott Field, Ill., on March 22nd.

Obituaries

First Lieutenant Carlyle W. Phillips, Air Corps, lost his life in an airplane accident at Greenville, Ala., March 16, 1937. Born April 22, 1908, in Missouri, he graduated from the United States Military Academy, West Point, N.Y., in June, 1933, and was commissioned a second lieutenant of Field Artillery. Assigned to the Air Corps for flying training, he graduated from the Primary Flying School, Randolph Field, Texas, June 30, 1934, and from the Advanced Flying School, Kelly Field, Texas, October 13, 1934, and was rated as Airplane Pilot and Airplane Observer as of that date. He specialized in Observation Aviation.

Lieut. Phillips' first duty assignment as an Air Corps officer was at Luke Field, T.H., with the 50th Observation Squadron, and performed successively the functions of Communications Officer, Assistant Engineer Officer and Assistant Armament Officer. Upon the completion of his tour of foreign service, he was ordered to Scott Field, Ill., where he arrived last January and was assigned to the 15th Observation Squadron.

At the time of the fatal accident, Lieut. Phillips was piloting a C-24 Transport airplane from the gunnery range at Valparaiso, Florida, to Scott Field.

Staff Sergeant Thomas M. Stallings, Quartermaster Corps, who was stationed at Scott Field for the past five years, died of natural causes on March 14, 1937.

Sergeant Stallings, a native of Carthage, Tenn., first enlisted in the Army in 1904, serving with the 27th Infantry in Cuba, and later with the 115th Coast Artillery at Fort Hancock, N.J.

Transferring to the Quartermaster Corps early in 1918, he remained at Fort Hancock throughout the duration of the war, followed by service at Fort Benning, Ga.; Fort Davis, Canal Zone; the Presidio of San Francisco, Calif., and finally at Scott Field, where he reported in 1931.

At the age of 55, Sergeant Stallings had completed more than 28½ years of faithful service in the Army, and was due for retirement in a short time.

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GEN. ARNOLD TO SPEAK AT ARMY DAY DINNER

Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, has accepted the invitation of the President of the Department of Pennsylvania of the Reserve Officers Association of the United States to deliver an address on the occasion of the annual dinner at Pittsburgh, Pa., on Army Day. The patriotic bodies of Pittsburgh are associated together in the observance of this event.

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INSIGNIA OF THE 3RD AIR BASE SQUADRON

To the family of insignia of Selfridge Field, the Indian, the Owl and the Hawk, there has been added another. It is the insignia of the 3rd Air Base Squadron.

This newest insignia is composed of a spherical hornets' nest suspended from a tree limb. The nest is executed in tones of gray, so applied as to give the picture a third dimension. The whole is mounted on a circular field of slate blue, bounded by a thin margin of gold. The realistic touch is further enhanced by the addition of three "yellow jacket" wasps clinging to the opening of the nest.

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AERIAL GUNNERY PRACTICE AT CAMP SKEEL

The 17th Pursuit Squadron, Selfridge Field, Mich., spent the period from March 15th to 23rd, inclusive, in gunnery practice at Camp Skeel, located on Lake Van Etten near Oscoda, which is approximately 130 miles north of Selfridge Field.

Bad weather conditions cut down the actual days of target practice to six, but the same bad weather gave the men an excellent opportunity to test the new N-2 electric gun sights. Some very good scores, both on ground targets and sleeves were turned in. Little or no difficulty was encountered in starting the ships, even though the temperature fell below zero at times.

The 27th Pursuit Squadron will be the next organization to be ordered to Camp Skeel for gunnery practice, on March 30th. Fourteen airplanes and the following pilots will be included in the order:

Lieuts.	Crabb	Kreider	Schrek
	Barnett	Chennault	Bleyer
	Theobald	Todd	Quick
	Jarrell	Bennett	
Cadet	Helmick		

A week's stay is frigidly anticipated.

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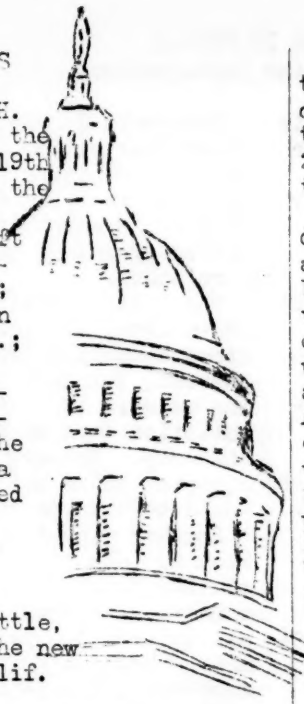
GENERAL BRANT DEPARTS FOR NEW STATION

An aerial review by the 3rd Wing was flown on the morning of March 13th in honor of General Gerald C. Brant, commanding the 3rd Wing, who was departing for Langley Field, Va., to assume command of the 2nd Wing. Previous to the review, General Brant presented the Harmon Efficiency Trophy to the 90th Attack Squadron.

In the evening, the General and Mrs. Brant were guests of honor at a farewell party at the Officers' Club. They carry with them to their new station the heartiest wishes of the entire command.

V-7267, A.C.

WASHINGTON OFFICE NOTES



Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, returned March 19th from an inspection trip to the West Coast. While on this trip he visited the aircraft plants of the Stearman Aircraft Co., Wichita, Kansas; the North American Aviation factory, Los Angeles, Calif.; the Northrop Corporation, Inglewood, Calif.; the Consolidated Aircraft Corporation, San Diego, Calif.; the Douglas Aircraft Co., Santa Monica, Calif.; the Lockheed Aircraft Corp., Burbank, Calif.; the Vulta Airplane Development Corporation, Glendale, Calif., and the Boeing Aircraft Co. at Seattle, Wash. He also inspected the new Air Base at Sacramento, Calif.

Major Lowell H. Smith, Chief of the Inspection Division, left March 28th on an inspection trip.

Recent visitors to the Chief's Office were Captain Benjamin W. Chidlaw, from Fort Leavenworth, Kansas; Major William W. Welsh, from Maxwell Field, Ala., and Captain John W. Warren, from Fort Benning, Ga., during the course of extended navigation flights.

Recent visitors from Langley Field were . . . Majors Otto G. Trunk Lawrence P. Hickey, and Edgar E. Glenn.

Major Robert Kauch made a ferry flight to Wright Field, March 27th.

Captain S.W. Towle, Jr., of the Personnel Division, left March 20th on a navigation flight to Chicago, Ill.

Major Malcolm C. Grow left March 27th on an inspection trip to Camp Lewis, Wash.

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90TH ATTACK SQUADRON WINS EFFICIENCY TROPHY

The Third Attack Group was honored on Saturday, March 13th, by the awarding of the Harmon Trophy to the 90th Attack Squadron of that Group. The Harmon Trophy had previously been presented to Barksdale Field by a group of Shreveport business men, in honor of Colonel Millard F. Harmon, first commanding officer of that field, with the suggestion that it be awarded annually to the organization having the highest efficiency rating.

Decision as to a suitable basis for making the award proved something of a problem, but a system was finally evolved which took into consideration the number of hours flown and the average number of airplanes in commission per number of airplanes assigned, also the number of forced landings during the calendar year.

Brigadier General Gerald C. Brant presented the Trophy directly to Captain William N. Amis, commanding officer of the 90th Squadron, who in turn passed it on to his Engineering Officer, 2nd Lieut. Charles H. Leitner, Jr. An inspection and an aerial review followed immediately.

The review was all but interrupted by a sudden rainstorm which almost obscured the field, as the 13th and 8th Attack Squadrons, followed by the 20th Pursuit Group, approached the reviewing stand. Despite the difficulties encountered, the review was completed as planned, with no greater discomfort to the pilots than a little browbeating from the rain. The 90th Attack Squadron, both commissioned and enlisted, standing on the ramp in full uniform, fared worse, receiving a thorough drenching from the rain. The prescribed attire for the farewell party in honor of General Brant, who was leaving for his new assignment at Langley Field, Va., was hurriedly changed from full uniform to optional dress.

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STATION ASSIGNMENTS OF TACTICAL SCHOOL GRADUATES

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers are assigned to duty at the stations indicated, effective upon the completion of their present course of instruction at the Air Corps Tactical School, Maxwell Field, Ala.:

To Chanute Field, Ill.: Lieut. Colonel Lloyd N. Keesling (Major), Captain John K. Nissley.

To Middletown Air Depot, Middletown, Pa.: Major Ray A. Dunn.

To Langley Field, Va.: Major Clyde V. Finter, Captain Alva L. Harvey, 1st Lieut. Frank H. Robinson.

To Barksdale Field, Shreveport, La.: Major James M. Gillespie (Captain), Major Paul L. Williams (Captain), 1st Lieut. Bud J. Peaslee.

To Selfridge Field, Mich.: Major William C. Goldsborough (Captain),

To Mitchel Field, N.Y.: Major Ulysses G. Jones (Captain), Captain Joseph Smith.

To Scott Field, Ill.: 1st Lieut. Fay O. Dice, with 15th Observation Squadron.

To Hamilton Field, Calif.: Majors Harold A. Bartron (Captain) and Edward D. Jones (Captain).

To Office Chief of the Air Corps, Washington: Major Wallace G. Smith.

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WAR DEPARTMENT SPECIAL ORDERS

Changes of Station: To Bolling Field, D.C.: 1st Lt. Robert L. Fenton, from Randolph Field.

To Chanute Field, Ill.: Captain David J. Ellinger, from San Antonio Air Depot.

To San Antonio Air Depot: Captain George A. Whatley, from Kelly Field, Texas.

Retirement: Captain Isaac J. Williams, March 31, 1937, for disability incident to service.

Relieved from duty with Air Corps: 2nd Lieut. Leland R. Drake, from Air Corps Training Center to Philippines for assignment to duty with the Coast Artillery Corps.

Extension of active duty of Reserve Officers: 2nd Lt. Richard T. Black, now in Panama, to Nov. 15, 1939; 2nd Lt. Marion D. Unruh, now in Panama, to October 31, 1939.

A NEW DEAL IN PANAMA

By the News Letter Correspondent

FOR years the cry has been 'The trouble with Panama is you can't fly anywhere but up and down the ditch." But at last, to everyone's joy, this old cry has been relegated to the junk heap.

Through the combined efforts of Brigadier General George H. Brett, Lieut. Colonel B.G. Weir and Major George H. Beverly, the policy of no cross countries has changed to a policy of flights to as many countries as possible. No longer will Air Corps officers in Panama be green with envy of officers in the States taking 500 and 1,000-mile flights, and this is only the beginning.

On February 18th, fourteen ships from Albrook Field took off for a flight to Guatemala City. After gasing at David, the flight was on its way to Managua, Nicaragua, where we spent the first night of our journey. The next day, a "hop" of three hours put us in Guatemala City by noon, and everyone was amazed to find one of the most beautiful airport buildings they had ever seen. This three-hour "hop" took us out of Nicaragua over El Salvador into Guatemala, and it was one of the most interesting flights we have had the pleasure of making. Four active volcanoes were passed, also many extinct craters, one of which was large enough to fly into and easily circle in its depths.

Guatemala is one of the most picturesque and historical cities it has been our pleasure to see, and everyone was disappointed in not being able to spend more time in seeing the sights. However, every camera in the flight worked overtime, and many excellent pictures were taken.

The following afternoon found us in San Jose, Costa Rica, another interesting city to which cross countries from Panama can be made by requesting ten days in advance. The next evening we were back at Albrook Field tired but satisfied that we had enjoyed every minute of the trip. We were royally welcomed at each stopping point and given the assurance that we would be welcome back at any time.

Another flight of nine ships is scheduled soon to take off for Lima, Peru, and several similar trips are planned in the next several months. The crust has been broken, boys, and all indications point to flights of this nature being a regular part of the training directive of the 19th Composite Wing in the immediate future.

These flights will not only be valuable training for all officers but will be highly interesting from a personal standpoint. Yes, we have a new deal in Panama, and I see no sad faces.

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AN ECHO FROM THE PANAMA FLIGHT

In flying from Miami, Fla., to Albrook Field, Canal Zone, nine Bombers, commanded by Major J.K. McDuffie, completed the longest over the water mass flight in the history of the Army Air Corps. The 1100-mile "hop" was made in eight hours, and all 21 officers were in fine fettle upon landing at Albrook Field. The flight could not have chosen a more ideal time to come to Panama, as the Carnival Season was in full swing, and all visiting officers enjoyed it immensely.

The flight is another big step forward for the Army Air Corps and clearly shows the effectiveness of long range modern equipment. It demonstrates the mobility of a modern Air Corps and how distant points can be supported quickly and effectively by our Air Corps.

Panama and the large part of Central America, including the Caribbean Sea, is unfortunately afflicted with a wet season, which extends over a period from May to December. Since "Ole Man Weather" is still our most hated enemy, the immediate support of the Panama Canal would be seriously jeopardized during this season, but with the most modern radio equipment bad weather may also be whipped.

"The flight was a big event for Albrook Field, and in our small way we did our best to entertain everyone," says the News Letter Correspondent. "We hope our best was good enough, for we are waiting for another visit."

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First Lieuts. Frank F. Everest, Jr. and Harry E. Wilson are under orders for duty in Hawaii upon completion of their course of instruction at the Air Corps Tactical School, Maxwell Field.

HAWAIIAN HIGH SCHOOL STUDENTS VISIT LUKE FIELD

Luke Field was recently visited by 21 cadet officers of the Roosevelt High School ROTC, of Honolulu, accompanied by their instructor, Captain Harold J. Keeley, Infantry. The group was met on arrival by representatives of the 23rd and 72nd Bombardment Squadrons and were taken immediately to the hangars, where the different types of Bombardment airplanes were explained in detail. The bombing trainer was demonstrated, and brief lectures were given on machine guns, bombs, bomb racks and radio equipment.

The visit of the high school boys was concluded with a tour of the departments and shops of the Hawaiian Air Depot. They left the post at 12:00 noon after a visit which they claimed made a new high in their military instruction.

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The 15th Observation Squadron gunnery detail returned to Scott Field from its first visit to the Valparaiso Gunnery and Bombing Base near Valparaiso, Fla., on March 16th. Nine officers and 17 enlisted men fired the two observation courses with .30 caliber machine guns mounted in the O-46A Observation airplanes, and all but one, an enlisted man, qualified as Expert Aerial Gunners. The nine officers were Majors Walter T. Meyer, Raphael Baez, Jr., 1st Lieuts. James F. Walsh, Mark E. Bradley, William J. Bell, Carlyle W. Phillips, 2nd Lieuts. James V.G. Wilson, Air Corps, and 2nd Lieuts. Jack S. Hunt and Sylvester L. Fahey, Air Reserve.

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